Amended claims

1. Speed indication device (100) for determining a speed indication signal (410) indicating a speed of a wireless mobile telecommunication device (14) relative to said speed indication device (100),
characterised in that
said speed indication device (100) determines said speed indication signal (410) from a sequence of transmit power control commands sent by said wireless mobile telecommunication device (14) to an access point (12) in a wireless telecommunication network for controlling, in use, a transmit power of a radio signal transmitted by said access point (12) to said wireless mobile telecommunication device (14), and
in that
said speed indication device (100) comprises:

- a memory (130) for storing said sequence of transmit power control commands;
- a logical filter circuit (120) for determining a radio signal strength minimum in said radio signal at a location of said mobile telecommunication device (14) by detecting if a predetermined number of consecutive transmit power control commands from said sequence of transmit power control commands each comprise either an 'up' or a 'down' transmit power control command,

allowing the speed indication device to determine information concerning the speed of the mobile telecommunication device (14) relative to a maximum and minimum reception signal strength in said radio signal.

26. 05. 2004

Amended Claims

(43)

1. Speed indication device (100) for determining a speed indication signal (410) indicating a speed of a wireless mobile telecommunication device (14) relative to said speed indication device (100),
characterised in that
said speed indication device (100) determines said speed indication signal (410) from a sequence of transmit power control commands sent by said wireless mobile telecommunication device (14) to an access point (12) in a wireless telecommunication network for controlling, in use, a transmit power of a radio signal transmitted by said access point (12) to said wireless mobile telecommunication device (14), and
in that
said speed indication device (100) comprises:
- a memory (130) for storing said sequence of transmit power control commands;
- a logical filter circuit (120) for determining a radio signal strength minimum in said radio signal at a location of said mobile telecommunication device (14) by detecting if a predetermined number of consecutive transmit power control commands from said sequence of transmit power control commands each comprise either an 'up' or a 'down' transmit power control command.

2. Speed indication device (100) according to claim 1,
characterised in that
said logical filter circuit (120) is arranged, in use, for identifying if at least four consecutive transmit power control commands (n, n+1, n+2, n+3) each comprise an 'up' transmit power control command by logically comparing the value of each of said at least four transmit power control commands (n, n+1, n+2, n+3).

3. Speed indication device (100) according to claim 2,
characterised in that
said logical filter circuit (120) further is arranged, in use, to identify a start of said at least four consecutive transmit power control commands (n, n+1, n+2, n+3) by comparing if a first (n) of said at least four transmit power control command (n, n+1, n+2, n+3) is not equal to a preceding transmit power control command (n-1) in said sequence of transmit power control commands.

4. Access point (12) for providing a wireless mobile telecommunication device (14) access to a wireless telecommunication network (1),
characterised in that
said telecommunication access point (12) comprises a speed indication device (100) according to any of the preceding claims 1, 2, or 3.

5. Access point (12) according to claim 4,
characterised in that it comprises a speed information control device (400) for providing a speed estimation signal (440) for said wireless mobile telecommunication device (14),
said access point (12) further comprising a Doppler frequency measurement device (200) for determining a Doppler speed signal (220) for said wireless mobile telecommunication device (14), and
said speed information control device (400) being arranged to provide said speed estimation signal (440) in dependence on said speed indication signal (410) for speeds of said wireless mobile telecommunication device (14) below a predetermined threshold and on said Doppler speed signal (220) for speeds above said predetermined threshold.

6. Access point (12) according to claim 5,
characterised in that
said speed information control device (400) comprises a speed tuning device (420); said speed tuning device (420) being arranged to carry out the following steps:
- determining a tuning value (450), said tuning value (450) being a division of said Doppler speed signal (220) over said speed-indication signal, said tuning value (450) being filtered with a long-time constant; and
– in dependence of a predetermined threshold (Vth) providing for determining of said speed estimation signal (440):

at speeds below said predetermined threshold (Vth) a speed-related information (424) in dependence of said tuning value (450);

at speeds above said predetermined threshold (Vth) a tuned Doppler measurement signal (221), being said Doppler measurement signal multiplied by said tuning value (450).

7. Access point (12), according to claim 4, 5, or 6 characterised in that said access point (12) is arranged to use a Wide-band Code Division Multiple Access protocol.

8. Method for determining a speed indication signal (410) indicating a speed of a wireless mobile telecommunication device (14) to be carried out by a speed indication device (100) according to claim 1, 2, or 3 characterised in that said method comprises

- determining said speed indication signal (410) from a sequence of transmit power control commands sent by said wireless mobile telecommunication device (14) to an access point (12) in a wireless telecommunication network for controlling, in use, a transmit power of a radio signal transmitted by said access point (12) to said wireless mobile telecommunication device (14), and
- determining a radio signal strength minimum in said radio signal at a location of said mobile telecommunication device (14) by detecting if a predetermined number of consecutive transmit power control commands from said sequence of transmit power control commands each comprise either an 'up' or a 'down' transmit power control command,

allowing to determine information concerning the speed of the mobile telecommunication device (14) relative to a maximum and minimum reception signal strength in said radio signal.

8. Method for determining a speed indication signal (410) indicating a speed of a wireless mobile telecommunication device (14) to be carried out by a speed indication device (100) according to claim 1, 2, or 3 characterised in that
said method comprises
- determining said speed indication signal (410) from a sequence of transmit power control commands sent by said wireless mobile telecommunication device (14) to an access point (12) in a wireless telecommunication network for controlling, in use, a transmit power of a radio signal transmitted by said access point (12) to said wireless mobile telecommunication device (14), and
- determining a radio signal strength minimum in said radio signal at a location of said mobile telecommunication device (14) by detecting if a predetermined number of consecutive transmit power control commands from said sequence of transmit power control commands each comprise either an 'up' or a 'down' transmit power control command.

9. Computer program product to be loaded by a speed indication device (100) to provide said speed indication device (100) with the capacity to determine a speed indication signal (410) indicating a speed of a wireless mobile telecommunication device (14) relative to said speed indication device (100),
characterised in that
said computer program product is arranged to provide said speed indication device (100) with the capacity
- to determine said speed indication signal (410) from a sequence of transmit power control commands sent by said wireless mobile telecommunication device (14) to an access point (12) in a wireless telecommunication network for controlling, in use, a transmit power of a radio signal transmitted by said access point (12) to said wireless mobile telecommunication device (14), and
- to determine a radio signal strength minimum in said radio signal at a location of said mobile telecommunication device (14) by detecting if a predetermined number of consecutive transmit power control commands from the sequence of transmit power control commands each comprise either an 'up' or a 'down' transmit power control command.

10. Data carrier with a computer program product as claimed in claim 9.